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405 Progress Toward Achieving the 1990 Objectives for Pregnancy and Infant Health

413 Human Cutaneous Anthrax -- North Carolina, 1987

Perspectives in Disease Prevention and Health Promotion

Progress Toward Achieving the 1990 Objectives for Pregnancy and Infant Health

The 1990 Health Objectives for the Nation, published by the Public Health Service (PHS) in 1979, included 19 objectives related to pregnancy and infant health (*1*). PHS identified 13 of these as "priority objectives" for federal programs and activities (Table 1). These objectives concern improving the health status, reducing risk factors, increasing public and professional awareness, and improving health services and protection for mothers and infants. The Office of Maternal and Child Health (OMCH), Bureau of Maternal and Child Health and Resources Development, Health Resources and Services Administration (HRSA), is responsible for monitoring federal efforts to reach these objectives. Progress is assessed by monitoring national vital statistics and, when national data sets are not available, by selected studies.

Despite numerous public and private efforts, current projections for 1990 indicate that the majority of objectives for improving health status and reducing risk factors for pregnant women and infants will not be met (Table 2). The decline in the infant mortality rate (IMR) has slowed since the preceding decade, and no progress has been made in reducing low birthweight (LBW) -- less than 2,500 grams (*2,3*). Between 1970 and 1981, the IMR in the United States declined by nearly 5% per year. Between 1981 and 1985, the decline slowed to less than 3% per year. Based on estimates of the National Center for Health Statistics (NCHS), recent rates now exceed the confidence limits estimated from the 1970–1981 trend. The 1970–1981 trend projected the 1990 IMR to be 7.8 per 1,000 live births. The 1981–1985 trend projects a 1990 IMR of 9.1 per 1,000 live births. In addition, the 1970–1981 trend analysis projected that 41 states would meet the 1990 objective of no more than nine deaths per 1,000 live births. The 1981–1985 analysis projects that 25 states will meet this objective.

Between 1970 and 1985, IMR has decreased by 50% and LBW rate by 15%. Thus, most of the progress in reducing infant mortality over the past 15 years has resulted from a decline in birthweight-specific mortality; that decline, in turn, is likely due to technologic improvements in perinatal care. The LBW rate (6.8%) was the same in 1980 and 1985. The incidence of very LBW infants (less than 1,500 grams at birth) has been increasing in recent years. The 1990 LBW projection of 6.7% is 35% higher than the objective.

1990 Objectives — Continued

Programs to promote the use of infant safety seats in automobiles have been successful. The objective for such use has been met, according to survey data. In June 1987, in a sample study involving 19 cities, more than 75% of toddlers and infants were observed to be in safety seats (*4*).

National data are available for only part of the objective related to increased public and professional awareness of nutritional needs and of the hazards caused by smoking and by using alcohol and drugs during pregnancy. National survey results indicate that pregnant women and women who have recently been pregnant are more knowledgeable about smoking and alcohol risks than are members of the general population 18 to 44 years of age (*5*).

Progress has been made in one of the four priority objectives for improving services and protection: all states have screening programs for newborns (*6*). Progress has been limited or cannot be assessed for the other three objectives in this category. In 1980, 73.3% of pregnant women received first-trimester prenatal care, and in 1985, 76.2% received such care. Recent studies confirm that access to care remains inadequate for many women (*7*). No data are available for assessing the

TABLE 1. 1990 Federal priority objectives for pregnancy and infant health

Improved Health Status

1. National infant mortality rate (IMR) should be reduced to no more than 9 deaths per 1,000 live births.
2. The neonatal death rate should be reduced to no more than 6.5 deaths per 1,000.
3. The perinatal death rate should be reduced to no more than 5.5 deaths per 1,000.
4. No county, racial, or ethnic group should have an IMR in excess of 12 deaths per 1,000.
5. No county, racial, or ethnic group should have a maternal mortality rate of more than 5 deaths per 100,000 live births.

Reduced Risk Factors

6. Low birthweight (LBW) babies (less than 2,500 grams) should constitute not more than 5% of live births.
7. No county, racial, or ethnic group should have an LBW rate that exceeds 9%.
8. The majority of infants should leave hospitals in car safety seats.

Increased Public Awareness

9. Eighty-five percent of women of childbearing age should be able to choose foods wisely and should understand the hazards of smoking, alcohol, and drugs during pregnancy and lactation.

Improved Services and Protection

10. All women and infants should be served at a level appropriate to their need by a regionalized system of perinatal care.
11. The proportion of women in any county, racial, or ethnic group who obtain no prenatal care during the first trimester of pregnancy should not exceed 10%.
12. All newborns should be screened for metabolic disorders for which effective tests and treatments are available.
13. All infants should be able to participate in comprehensive primary health care.

1990 Objectives — Continued

progress being made in providing regionalized systems of perinatal care or for estimating the availability of primary care services for infants.

Reported by: Office of Maternal and Child Health, Bureau of Maternal and Child Health and Resources Development, Health Resources and Services Administration. Office of Disease Prevention and Health Promotion. National Institute of Child Health and Human Development, National Institutes of Health. National Center for Health Statistics; Div of Reproductive Health, Center for Health Promotion and Education, CDC.

Editorial Note: Efforts to achieve the objectives for pregnancy and infant health must be sustained and strengthened. The Low Birthweight Prevention Work Group, formed in 1984 with representation of experts on maternal and infant health from organizations within the Department of Health and Human Services, has served as the focus and coordinating body within the federal government for service, research, and information efforts to address LBW and other causes of infant mortality in the United States. This group has worked to develop a broad national strategy to understand and effect improvements in LBW and IMR. Highlights of recent initiatives follow.

Efforts to improve coordination and effectiveness of health services have intensified. The National Governors' Association and HRSA are collaborating to assist states in implementing the current expanded Medicaid eligibility and coverage options. In a related activity, the Health Care Financing Administration and OMCH are working with the Medicaid/Maternal and Child Health Technical Advisory Group in promoting best practices for Medicaid and Title V programs at the state level. In a private/public partnership, the Robert Wood Johnson Foundation and OMCH are collaborating on grant initiatives in states with high infant mortality to support improved health care for pregnant women and their infants.

The prevention of LBW has been identified by the National Institute of Child Health and Human Development as a major research initiative. Research is focusing on mechanisms involved in premature labor and intrauterine growth retardation,

TABLE 2. 1985 Rates, 1990 projected rates, and 1990 target rates, by race, for the 1990 objectives for pregnancy and infant health*

	1985 Rates			1990 Projected Rates† (and 1990 Target Rates)		
Rate	All Races	White	Black	All Races	White	Black
Infant mortality (IMR)	10.6	9.3	18.2	9.1 (9.0)	7.9	15.9 (12.0)
Neonatal mortality	7.0	6.1	12.1	5.7 (6.5)	4.9	10.1 (8.7)§
Postneonatal mortality	3.7	3.2	6.1	3.5 (2.5)§	3.0	5.9 (3.3)§
Perinatal mortality	10.7	9.6	17.4	8.5 (5.5)	7.7	14.7 (7.3)¶
Maternal mortality	7.8	5.2	20.4	7.0 (5.0)	4.1	20.5 (5.0)
Low birthweight (LBW)	6.8	5.6	12.4	6.7 (5.0)	5.6	12.3 (9.0)
Prenatal care delay	23.8	20.6	38.2	23.6 (10.0)	20.4	38.5 (10.0)

*Maternal mortality rate per 100,000 live births, prenatal care delay rate and LBW rate per 100; all other rates per 1,000 live births.
†Projections based on log-linear regressions of 1981–1985 rates.
§Implied target based on distribution of targets for age-at-death within IMR for all races.
¶Implied target based on 1990 targeted racial differential for IMR.

Source: National Center for Health Statistics.

1990 Objectives — Continued

evaluation of methods for preventing and treating disorders affecting LBW, and racial and ethnic differences in mortality and LBW.

A national system that links infant death and birth records is essential to the effective monitoring of trends and identification of high-risk populations. Therefore, a system for matching birth and death certificates has been implemented by NCHS. Also, a survey will be conducted by NCHS to collect data on births, fetal and infant deaths, national population estimates of maternal smoking and drinking, and access to prenatal care. Surveys on the nutritional status and on behaviors of mothers are being planned by some states in collaboration with CDC.

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TABLE I. Summary — cases of specified notifiable diseases, United States

Disease	26th Week Ending			Cumulative, 26th Week Ending		
	Jul. 2, 1988	Jul. 4, 1987	Median 1983-1987	Jul. 2, 1988	Jul. 4, 1987	Median 1983-1987
Acquired immunodeficiency Syndrome (AIDS)	567	U*	90	15,278	9,315	3,597
Aseptic meningitis	78	200	188	2,087	2,801	2,446
Encephalitis: Primary (arthropod-borne & unspec)	8	17	19	319	445	445
Post-infectious	2	3	2	51	62	62
Gonorrhea: Civilian	12,072	12,642	15,580	329,590	392,121	418,869
Military	165	272	400	5,903	8,219	10,238
Hepatitis: Type A	292	489	386	11,668	12,382	10,701
Type B	295	584	467	10,502	12,771	12,454
Non A, Non B	29	64	69	1,229	1,595	1,790
Unspecified	34	45	98	1,036	1,580	2,408
Legionellosis	19	24	16	413	448	333
Leprosy	2	2	6	91	99	126
Malaria	11	11	18	339	363	386
Measles: Total†	25	112	99	1,528	2,681	1,839
Indigenous	23	105	90	1,367	2,377	1,586
Imported	2	7	7	161	304	213
Meningococcal infections	36	41	41	1,688	1,743	1,672
Mumps	78	120	47	2,945	9,413	2,083
Pertussis	23	37	41	1,047	882	940
Rubella (German measles)	3	6	11	118	211	375
Syphilis (Primary & Secondary): Civilian	554	674	588	18,688	16,894	13,965
Military	1	4	4	88	85	98
Toxic Shock syndrome	7	9	9	146	158	195
Tuberculosis	318	377	509	9,639	10,299	10,384
Tularemia	4	5	5	77	74	74
Typhoid Fever	5	4	5	174	148	158
Typhus fever, tick-borne (RMSF)	28	28	40	192	214	243
Rabies, animal	51	78	95	2,047	2,531	2,576

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1988		Cum. 1988
Anthrax	-	Leptospirosis	15
Botulism: Foodborne (Oreg. 1)	11	Plague	2
Infant	20	Poliomyelitis, Paralytic	-
Other	2	Psittacosis (Mass. 1)	38
Brucellosis (Mo. 1;Nebr. 1; Fla. 1)	31	Rabies, human	-
Cholera	-	Tetanus (Ariz. 1)	21
Congenital rubella syndrome	3	Trichinosis	37
Congenital syphilis, ages < 1 year	-		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†One of the 25 reported cases for this week was imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending July 2, 1988 and July 4, 1987 (26th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	15,278	2,087	319	51	329,590	392,121	11,668	10,502	1,229	1,036	413	91
NEW ENGLAND	628	86	11	1	9,687	12,314	413	639	83	56	18	11
Maine	19	6	1	-	201	369	14	27	3	1	2	-
N.H.	15	12	-	-	137	200	30	35	5	3	1	-
Vt.	5	5	3	-	75	102	5	17	5	2	1	-
Mass.	330	35	6	1	3,389	4,507	202	393	55	38	11	10
R.I.	37	23	-	-	906	1,034	51	58	9	-	3	1
Conn.	222	5	1	-	4,979	6,102	111	109	6	12	-	-
MID. ATLANTIC	5,209	207	38	3	50,366	63,893	718	1,386	82	122	88	8
Upstate N.Y.	732	118	26	1	6,935	8,417	405	362	40	13	38	-
N.Y. City	2,799	42	7	2	21,443	33,936	165	656	8	84	17	7
N.J.	1,248	47	5	-	7,328	8,261	121	325	27	25	20	1
Pa.	430	-	-	-	14,660	13,279	27	43	7	-	23	-
E.N. CENTRAL	1,113	276	74	5	51,213	56,687	680	1,083	77	56	91	1
Ohio	276	96	25	2	11,797	12,352	175	282	17	10	37	-
Ind.	79	35	11	-	4,283	4,543	74	164	10	17	5	-
Ill.	497	36	12	3	14,691	17,494	117	121	7	7	-	-
Mich.	194	97	19	-	16,677	17,142	186	380	25	19	39	-
Wis.	67	12	7	-	3,765	5,156	128	136	18	3	10	1
W.N. CENTRAL	369	93	23	4	13,482	15,828	709	512	57	17	49	1
Minn.	88	17	2	1	1,813	2,514	52	72	8	3	2	-
Iowa	17	18	6	-	1,016	1,516	32	47	10	1	11	-
Mo.	182	27	1	-	7,671	8,200	383	302	26	8	10	-
N. Dak.	2	-	2	-	78	147	3	3	2	3	1	-
S. Dak.	5	9	1	1	268	294	6	2	2	-	13	-
Nebr.	25	3	4	2	760	920	29	27	-	-	5	-
Kans.	50	19	5	-	1,876	2,237	204	59	9	2	7	1
S. ATLANTIC	2,375	487	44	18	97,902	102,769	1,014	2,188	194	161	79	1
Del.	26	11	2	-	1,371	1,581	18	66	5	1	7	-
Md.	254	56	4	3	9,641	11,693	137	341	17	9	11	1
D.C.	253	10	-	1	6,931	6,960	9	25	3	1	-	-
Va.	183	53	17	3	6,590	7,473	214	156	44	107	6	-
W. Va.	7	9	1	-	660	769	8	30	2	3	-	-
N.C.	154	71	14	-	15,270	15,496	177	384	40	-	24	-
S.C.	75	8	-	1	8,533	8,548	27	286	7	3	12	-
Ga.	357	52	1	-	16,701	17,531	190	332	8	3	10	-
Fla.	1,066	217	5	10	30,205	32,719	234	548	58	34	9	-
E.S. CENTRAL	386	152	23	5	25,683	29,156	381	649	86	6	15	1
Ky.	44	48	6	1	2,508	2,912	328	111	32	2	7	-
Tenn.	177	13	6	-	8,559	10,165	30	330	24	-	4	-
Ala.	101	75	11	2	8,126	9,411	8	170	24	4	2	1
Miss.	64	16	-	2	6,490	6,670	15	38	6	-	2	-
W.S. CENTRAL	1,398	250	24	2	36,902	44,526	1,287	841	93	251	11	19
Ark.	47	4	2	-	3,519	4,551	155	48	1	5	2	-
La.	193	47	4	-	7,736	8,121	66	178	15	9	4	1
Okla.	68	18	4	-	3,376	4,788	248	89	24	19	5	-
Tex.	1,090	181	14	2	22,271	27,066	818	526	53	218	-	18
MOUNTAIN	459	86	19	2	7,143	10,291	1,690	856	139	92	22	1
Mont.	8	2	-	-	237	261	21	31	7	3	-	-
Idaho	5	1	-	-	194	376	77	53	3	1	-	-
Wyo.	3	1	-	-	111	221	4	7	3	-	2	-
Colo.	149	32	3	-	1,818	2,181	113	107	40	44	5	1
N. Mex.	25	5	2	-	648	1,110	322	126	10	1	-	-
Ariz.	160	24	5	1	2,555	3,560	838	333	42	25	11	-
Utah	39	13	4	1	290	324	197	79	25	14	2	-
Nev.	70	8	5	-	1,492	2,258	118	120	9	4	2	-
PACIFIC	3,341	450	63	11	37,212	56,655	4,776	2,368	428	275	30	48
Wash.	205	-	3	4	3,011	4,286	1,080	356	83	29	10	3
Oreg.	95	-	-	-	1,556	2,100	755	304	45	13	-	1
Calif.	2,979	397	57	7	31,773	48,962	2,778	1,651	295	225	17	38
Alaska	10	8	2	-	533	852	157	32	4	4	-	1
Hawaii	52	45	1	-	339	455	6	25	1	4	3	5
Guam	1	-	-	-	73	105	5	6	-	2	1	3
P.R.	627	21	2	1	726	1,099	20	138	25	27	-	3
V.I.	23	-	-	-	170	131	1	3	2	-	-	-
Amer. Samoa	-	-	-	-	33	43	-	2	-	3	-	2
C.N.M.I.	-	-	-	-	27	-	1	2	-	4	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending July 2, 1988 and July 4, 1987 (26th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	1988	Cum. 1988	Cum. 1987
UNITED STATES	339	23	1,367	2	161	2,681	1,688	78	2,945	23	1,047	882	3	118	211
NEW ENGLAND	30	-	71	-	48	238	143	-	96	-	89	23	-	1	1
Maine	2	-	8	-	-	3	6	-	-	-	11	4	-	-	1
N.H.	1	-	57	-	44	149	17	-	92	-	29	2	-	-	-
Vt.	1	-	-	-	-	23	9	-	1	-	2	3	-	-	-
Mass.	17	-	1	-	-	42	62	-	3	-	36	5	-	-	-
R.I.	4	-	-	-	-	2	21	-	-	-	2	1	-	1	-
Conn.	5	-	5	-	4	19	28	-	-	-	9	8	-	-	-
MID. ATLANTIC	47	16	476	1	24	506	166	17	243	4	53	110	1	11	10
Upstate N.Y.	16	-	14	11	3	32	79	12	58	3	34	83	-	2	8
N.Y. City	23	8	36	-	1	414	41	-	82	-	1	-	1	6	1
N.J.	5	-	2	-	11	22	45	-	31	-	4	6	-	1	1
Pa.	3	8	424	-	9	38	1	5	72	1	14	21	-	2	-
E.N. CENTRAL	19	6	119	-	40	286	190	31	640	1	110	117	-	22	22
Ohio	2	-	2	-	21	5	77	6	94	-	25	34	-	-	-
Ind.	-	6	50	-	-	-	18	19	63	-	53	1	-	-	-
Ill.	-	-	53	-	15	115	9	5	236	-	2	10	-	18	20
Mich.	15	-	14	-	4	29	53	1	167	1	19	28	-	4	2
Wis.	2	-	-	-	-	137	33	-	80	-	11	44	-	-	-
W.N. CENTRAL	10	-	10	-	-	213	69	-	114	-	49	52	-	-	1
Minn.	4	-	10	-	-	34	16	-	-	-	17	9	-	-	-
Iowa	1	-	-	-	-	-	-	-	30	-	14	9	-	-	1
Mo.	3	-	-	-	-	177	25	-	30	-	6	18	-	-	-
N. Dak.	-	-	-	-	-	1	-	-	-	-	6	4	-	-	-
S. Dak.	-	-	-	-	-	-	3	-	-	-	2	2	-	-	-
Nebr.	1	-	-	-	-	-	7	-	11	-	-	-	-	-	-
Kans.	1	-	-	-	-	1	18	-	43	-	4	10	-	-	-
S. ATLANTIC	52	-	243	-	16	88	308	10	449	6	126	184	-	14	12
Del.	-	-	-	-	-	30	1	-	-	-	3	-	-	-	2
Md.	4	-	5	-	2	2	31	-	79	5	22	5	-	-	2
D.C.	7	-	-	-	-	1	7	4	157	-	-	-	-	-	-
Va.	8	-	146	-	1	1	36	4	128	-	27	38	-	11	1
W. Va.	-	-	6	-	-	-	2	-	7	-	4	27	-	-	-
N.C.	10	-	-	-	1	2	53	2	35	1	33	65	-	-	-
S.C.	5	-	-	-	-	-	31	-	4	-	-	-	-	-	-
Ga.	4	-	-	-	-	-	44	-	20	-	17	17	-	-	1
Fla.	14	-	86	-	6	52	103	-	19	-	20	12	-	3	6
E.S. CENTRAL	6	-	43	-	-	2	166	17	367	2	16	17	-	-	3
Ky.	-	-	32	-	-	-	31	15	170	-	-	1	-	-	2
Tenn.	-	-	-	-	-	-	100	-	186	2	10	6	-	-	1
Ala.	4	-	-	-	-	-	24	2	8	-	5	6	-	-	-
Miss.	2	-	11	-	-	2	10	N	N	-	1	4	-	-	-
W.S. CENTRAL	31	-	11	1	3	202	112	1	656	1	66	59	-	7	5
Ark.	-	-	-	15	1	-	15	-	78	-	5	3	-	3	2
La.	5	-	-	-	-	-	34	-	200	1	10	13	-	-	-
Okla.	7	-	8	-	-	2	12	-	184	-	24	43	-	1	-
Tex.	19	-	3	-	2	200	51	1	124	-	27	-	-	3	3
MOUNTAIN	18	-	118	-	3	455	49	-	147	5	339	92	-	5	19
Mont.	2	-	-	-	1	116	1	-	2	-	1	3	-	-	3
Idaho	-	-	-	-	1	-	5	-	2	1	248	32	-	-	1
Wyo.	-	-	-	-	-	2	-	-	2	-	1	5	-	-	1
Colo.	9	-	116	-	1	5	14	-	28	-	13	21	-	1	-
N. Mex.	1	-	-	-	-	313	10	N	N	-	7	7	-	-	-
Ariz.	4	-	-	-	-	15	11	-	90	4	48	23	-	-	4
Utah	1	-	-	-	-	1	7	-	3	-	20	1	-	3	10
Nev.	1	-	-	-	-	3	1	-	11	-	1	-	-	1	-
PACIFIC	126	1	278	-	33	691	486	2	333	4	199	248	2	58	138
Wash.	9	-	2	-	-	5	42	-	16	3	45	35	-	-	-
Oreg.	6	-	3	-	-	35	28	N	N	-	6	14	-	-	1
Calif.	108	-	271	-	29	647	400	-	291	-	103	103	-	47	90
Alaska	2	-	-	-	-	-	5	-	6	1	5	3	-	-	1
Hawaii	3	1	2	-	4	4	13	2	9	-	40	93	2	11	46
Guam	-	-	-	-	1	2	-	-	2	-	-	-	-	1	1
P.R.	1	-	190	-	-	587	7	-	6	-	8	12	-	1	2
V.I.	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-
C.N.M.I.	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-

*For measles only, imported cases includes both out-of-state and international importations.
N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending July 2, 1988 and July 4, 1987 (26th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tularemia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	18,688	16,894	146	9,639	10,299	77	174	192	2,047
NEW ENGLAND	505	262	12	223	319	1	14	3	3
Maine	5	1	3	3	17	-	-	-	1
N.H.	6	2	3	6	8	-	-	-	2
Vt.	2	1	2	2	7	-	1	-	-
Mass.	205	129	4	133	170	1	9	1	-
R.I.	16	7	-	19	25	-	-	2	-
Conn.	271	122	-	60	92	-	4	-	-
MID. ATLANTIC	3,803	3,205	23	1,577	1,708	-	30	8	248
Upstate N.Y.	261	105	10	267	261	-	5	1	5
N.Y. City	2,410	2,326	5	771	815	-	16	5	-
N.J.	432	341	3	314	321	-	10	-	-
Pa.	700	433	5	325	311	-	-	2	243
E.N. CENTRAL	555	479	23	1,138	1,207	1	18	18	64
Ohio	52	55	18	214	235	-	5	17	-
Ind.	34	33	-	127	125	-	2	-	15
Ill.	260	257	-	452	490	-	9	-	12
Mich.	191	95	5	289	302	1	1	-	13
Wis.	18	39	-	56	55	-	1	1	24
W.N. CENTRAL	112	74	19	246	305	40	4	30	238
Minn.	8	8	3	42	67	3	2	-	83
Iowa	12	11	4	18	18	-	-	-	13
Mo.	68	36	6	121	170	26	2	21	7
N. Dak.	1	-	1	3	6	-	-	-	49
S. Dak.	-	6	1	21	16	8	-	4	63
Nebr.	17	7	2	9	12	2	-	-	7
Kans.	6	4	2	32	16	1	-	5	16
S. ATLANTIC	6,840	5,800	11	2,149	2,189	4	19	51	685
Del.	60	45	1	19	23	1	-	-	31
Md.	375	294	1	219	188	-	1	9	172
D.C.	328	178	-	89	71	-	-	-	4
Va.	221	147	-	206	213	2	9	3	209
W. Va.	7	6	-	41	61	-	-	1	54
N.C.	381	305	6	182	239	-	1	23	1
S.C.	384	372	-	243	200	-	-	7	40
Ga.	1,086	788	-	344	361	1	2	7	124
Fla.	3,998	3,665	3	806	833	-	7	1	50
E.S. CENTRAL	1,015	972	12	820	903	6	3	30	152
Ky.	35	8	5	210	228	4	1	7	66
Tenn.	446	411	4	227	264	1	-	17	45
Ala.	289	249	3	253	254	-	1	4	41
Miss.	245	304	-	130	157	1	1	2	-
W.S. CENTRAL	2,073	2,125	14	1,234	1,193	18	6	46	295
Ark.	111	109	-	134	140	10	-	3	49
La.	415	372	-	159	133	-	2	-	2
Okla.	80	82	4	118	111	8	-	37	22
Tex.	1,467	1,562	10	823	809	-	4	6	222
MOUNTAIN	367	345	18	227	292	5	6	4	172
Mont.	2	8	-	5	9	-	1	3	120
Idaho	-	3	2	2	17	-	-	1	-
Wyo.	1	1	-	1	1	-	-	-	19
Colo.	57	51	3	27	63	4	3	-	4
N. Mex.	25	31	-	46	50	1	1	-	4
Ariz.	86	166	5	119	134	-	1	-	23
Utah	10	15	8	-	6	-	-	-	2
Nev.	177	70	-	28	12	-	-	-	-
PACIFIC	3,418	3,632	14	1,925	2,183	2	74	2	190
Wash.	98	73	2	115	124	-	4	-	-
Oreg.	146	131	-	72	58	-	6	1	-
Calif.	3,146	3,418	12	1,630	1,865	-	62	1	182
Alaska	7	2	-	24	32	2	-	-	8
Hawaii	21	8	-	84	104	-	2	-	-
Guam	3	2	-	8	25	-	-	-	-
P.R.	328	508	-	105	149	-	2	-	36
V.I.	1	3	-	3	2	-	-	-	-
Amer. Samoa	-	-	-	3	2	-	-	-	-
C.N.M.I.	1	-	-	12	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending July 2, 1988 (26th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	664	454	112	60	18	20	53
Boston, Mass.	186	107	36	25	5	14	20
Bridgeport, Conn.	48	37	6	3	1	1	3
Cambridge, Mass.	30	22	6	2	-	-	2
Fall River, Mass.	25	20	4	1	-	-	2
Hartford, Conn.	50	31	7	7	4	1	1
Lowell, Mass.	31	26	3	2	-	-	2
Lynn, Mass.	10	9	1	-	-	-	-
New Bedford, Mass.	25	20	3	2	-	-	4
New Haven, Conn.	65	34	16	9	4	2	3
Providence, R.I.	41	29	10	-	2	-	-
Somerville, Mass.	5	4	1	-	-	-	1
Springfield, Mass.	39	30	5	4	-	-	3
Waterbury, Conn.	45	36	8	1	-	-	7
Worcester, Mass.	64	49	7	4	2	2	5
MID. ATLANTIC	2,485	1,620	469	237	86	70	118
Albany, N.Y.	48	39	4	1	1	3	2
Allentown, Pa.	14	12	1	1	-	-	-
Buffalo, N.Y.	100	63	20	8	4	2	13
Camden, N.J.	42	25	8	6	-	3	-
Elizabeth, N.J.	18	13	-	5	-	-	1
Erie, Pa.†	24	20	1	-	2	1	3
Jersey City, N.J.	39	29	6	1	1	2	1
N.Y. City, N.Y.	1,388	872	265	162	51	38	64
Newark, N.J.	48	20	16	6	2	4	-
Paterson, N.J.	29	16	9	4	1	-	4
Philadelphia, Pa.	302	197	61	20	15	9	9
Pittsburgh, Pa.†	81	55	18	4	4	-	3
Reading, Pa.	41	34	6	1	-	-	-
Rochester, N.Y.	102	69	21	7	2	3	9
Schenectady, N.Y.	27	21	5	1	-	-	-
Scranton, Pa.†	29	24	4	1	-	-	1
Syracuse, N.Y.	87	63	15	4	2	3	3
Trenton, N.J.	20	15	2	3	-	-	3
Utica, N.Y.	22	15	3	1	1	2	1
Yonkers, N.Y.	24	18	5	1	-	-	1
E.N. CENTRAL	2,180	1,404	471	162	65	78	84
Akron, Ohio	52	29	11	4	3	5	1
Canton, Ohio	37	24	7	3	2	1	4
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	98	57	28	8	3	2	6
Cleveland, Ohio	157	92	30	11	6	8	6
Columbus, Ohio	126	69	35	9	4	9	4
Dayton, Ohio	103	74	18	7	3	1	2
Detroit, Mich.	296	170	72	33	10	11	9
Evansville, Ind.	30	22	8	-	-	-	2
Fort Wayne, Ind.	53	40	10	1	2	-	3
Gary, Ind.	22	8	7	5	2	-	-
Grand Rapids, Mich.	66	45	13	3	1	4	3
Indianapolis, Ind.	144	95	34	9	5	1	4
Madison, Wis.	35	23	7	2	2	1	2
Milwaukee, Wis.	111	80	17	5	2	7	4
Peoria, Ill.	49	31	6	7	3	2	3
Rockford, Ill.	41	30	5	3	1	2	6
South Bend, Ind.	40	27	9	-	3	1	2
Toledo, Ohio	95	72	16	4	2	1	5
Youngstown, Ohio	61	44	13	3	1	-	2
W.N. CENTRAL	889	607	184	50	30	18	48
Des Moines, Iowa	75	49	19	6	1	-	4
Duluth, Minn.	21	16	5	-	-	-	-
Kansas City, Kans.	35	23	5	4	2	1	1
Kansas City, Mo.	124	78	30	7	6	3	4
Lincoln, Nebr.	40	31	6	-	2	1	4
Minneapolis, Minn.	227	162	43	11	9	2	22
Omaha, Nebr.	109	77	22	5	3	2	4
St. Louis, Mo.	149	89	33	15	5	7	3
St. Paul, Minn.	42	33	6	1	1	1	2
Wichita, Kans.	67	49	15	1	1	1	4

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,175	733	251	113	39	39	50
Atlanta, Ga.	106	58	26	14	6	2	4
Baltimore, Md.	224	148	46	20	4	6	10
Charlotte, N.C.	94	51	23	13	3	4	5
Jacksonville, Fla.	127	79	30	11	5	2	5
Miami, Fla.	94	57	24	11	1	1	-
Norfolk, Va.	71	44	12	6	4	5	4
Richmond, Va.	90	59	16	8	3	4	5
Savannah, Ga.	50	34	10	3	2	1	6
St. Petersburg, Fla.	69	53	6	4	3	3	4
Tampa, Fla.	68	50	10	3	2	3	1
Washington, D.C.	186	87	45	20	6	8	4
Wilmington, Del.	16	13	3	-	-	-	2
E.S. CENTRAL	732	478	152	43	28	30	47
Birmingham, Ala.	113	69	27	3	6	8	1
Chattanooga, Tenn.	65	49	10	2	3	1	4
Knoxville, Tenn.	62	38	14	4	3	3	4
Louisville, Ky.	102	61	20	5	4	11	6
Memphis, Tenn.	154	100	31	13	8	2	17
Mobile, Ala.	63	43	14	5	-	1	2
Montgomery, Ala.	53	38	11	1	2	1	9
Nashville, Tenn.	120	80	25	10	2	3	4
W.S. CENTRAL	1,252	762	271	109	61	49	60
Austin, Tex.	64	43	13	1	4	3	4
Baton Rouge, La.	30	17	8	5	-	-	4
Corpus Christi, Tex.§	37	28	8	1	-	-	-
Dallas, Tex.	189	116	36	13	11	13	2
El Paso, Tex.	66	36	20	7	3	-	6
Fort Worth, Tex	85	53	17	4	5	6	6
Houston, Tex.§	308	176	74	34	13	11	7
Little Rock, Ark.	61	24	11	14	8	4	7
New Orleans, La.	97	55	25	12	3	2	-
San Antonio, Tex.	159	106	24	11	10	8	15
Shreveport, La.	50	31	14	2	2	1	2
Tulsa, Okla.	106	77	21	5	2	1	7
MOUNTAIN	606	383	122	62	23	14	27
Albuquerque, N. Mex.	77	44	13	15	1	3	4
Colo. Springs, Colo.	38	27	7	2	1	-	5
Denver, Colo.	101	65	26	6	3	1	-
Las Vegas, Nev.	100	60	24	14	1	1	6
Ogden, Utah	25	17	3	3	1	1	4
Phoenix, Ariz.	77	45	13	8	6	5	2
Pueblo, Colo.	23	15	4	1	3	-	2
Salt Lake City, Utah	64	42	13	2	5	2	1
Tucson, Ariz.	101	68	19	11	2	1	3
PACIFIC	1,949	1,287	378	176	57	42	106
Berkeley, Calif.	21	14	4	1	-	2	-
Fresno, Calif.	73	47	17	3	3	3	7
Glendale, Calif.	33	23	8	2	-	-	1
Honolulu, Hawaii	48	28	12	6	2	-	5
Long Beach, Calif.	80	48	20	8	3	1	5
Los Angeles Calif.	581	395	110	47	17	6	22
Oakland, Calif.	51	39	7	1	1	3	5
Pasadena, Calif.	30	20	6	1	2	1	1
Portland, Oreg.	158	109	28	11	6	2	10
Sacramento, Calif.	138	90	22	13	7	6	7
San Diego, Calif.	158	97	31	19	4	6	12
San Francisco, Calif.	175	104	37	28	3	3	8
San Jose, Calif.	165	109	35	16	2	3	11
Seattle, Wash.	132	89	22	15	3	3	1
Spokane, Wash.	67	51	13	-	2	1	9
Tacoma, Wash.	39	24	6	5	2	2	2
TOTAL	11,932††	7,728	2,410	1,012	407	360	593

*Mortality data in this table are voluntarily reported from 121 cities in the United states, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available. Figures are estimates based on average of past available 4 weeks.

1990 Objectives — Continued

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Epidemiologic Notes and Reports

Human Cutaneous Anthrax — North Carolina, 1987

On July 10, 1987, a 42-year-old male maintenance worker at a North Carolina textile mill noticed a small, red, pruritic, papular lesion on his right forearm. Over the next week, the lesion became vesiculated and then developed a depressed black eschar with surrounding edema. On July 18, 24 hours after beginning treatment with an oral cephalosporin and a topical antifungal agent, he was hospitalized with worsening edema, pain, fever, and chills. Cutaneous anthrax was diagnosed. After the patient was treated with intravenous ampicillin and cephalosporins, his condition improved, and he was discharged on a regimen of oral cephalosporin. Cultures of blood and wound tissue were negative. An electrophoretic immunotransblot assay for antibody to anthrax antigens demonstrated a titer of 512 to anthrax protective antigen and lethal factor (*1*). The patient's lesion healed with residual local scarring, and he returned to work in late August 1987.

The patient had not traveled recently outside of North Carolina, been exposed to domestic or wild animals, worked with objects made of animal materials other than those at the mill, or used bone meal fertilizer. The textile mill has been in operation for 25 years and employs about 210 workers. No known cases of anthrax have occurred among the workers before, and there has never been a vaccination program. The mill produces yarn from domestic wool and wool imported from Australia and New Zealand; cashmere goat hair from China, Afghanistan, and Iran; and camel hair from China and Mongolia.

To assess the degree of *Bacillus anthracis* contamination in the mill, investigators collected samples of raw and processed materials and environmental debris from the plant. *B. anthracis* was grown from 8 (14%) of the 59 samples tested. Five samples of West Asian cashmere were positive for *B. anthracis*, as was one sample of Australian wool and two samples of surface debris from the storage area. It was not possible to

Anthrax — Continued

determine whether the cashmere came from Iran or Afghanistan. Upon its arrival in the United States, all cashmere used in the mill is first washed in a plant in Texas and then shipped in bales to North Carolina. Although no cases of anthrax were diagnosed in Texas, eight of 12 cashmere samples (and none of four camel hair samples) obtained at the Texas plant were positive for *B. anthracis*. A vaccination program for exposed workers at both sites has been recommended (*2*).

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Editorial Note: This is the first case of human anthrax to occur in the United States since 1984. Only nine cases have occurred in this country in the past decade. The practice of vaccinating workers involved in the industrial processing of imported animal products and the decline in using fibers of animal origin are the primary factors in the current low incidence of human anthrax in this country (*3*). Despite the rarity of anthrax, it should be considered in the differential diagnosis of suggestive skin lesions, especially for high-risk persons, such as workers who process materials of animal origin from areas of the world where the disease is endemic and veterinarians and agricultural workers who handle infected animals.

Cutaneous anthrax was diagnosed on the basis of the characteristic skin lesion and the positive immunologic assay. The cultures were probably negative because the patient had been treated with a broad-spectrum antibiotic before sampling. The most likely source of his infection was the textile mill, since he had no other history of exposure and the mill was found to be contaminated with *B. anthracis*. Maintenance workers in textile mills are at high risk because their duties take them throughout the mill on a regular basis and the nature of their work makes them prone to minor skin injuries that can become contaminated by the bacteria.

The West Asian cashmere was probably the contaminant at the mill. Western Asia is an endemic area for anthrax, and five of the eight positive samples from the mill were from this material. In addition, all of the positive samples from the Texas plant were from cashmere, but none of the camel-hair specimens were positive. The positive sample of Australian wool may have been cross-contaminated because it was stored in the same room as the positive cashmere samples.

This case demonstrates that the potential for occupational transmission of *B. anthracis* still exists and that careful attention must be given to preventive measures. Such measures include vaccinating potentially exposed workers and educating workers about how anthrax is transmitted.

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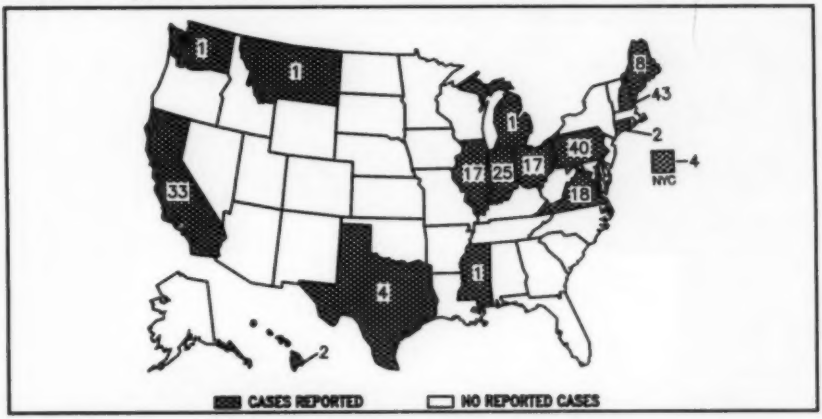
FIGURE 1. Reported measles cases — United States, Weeks 21–24, 1988

FIGURE 2. Reported measles cases — United States, Weeks 22–25, 1988



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